

Patent claims

1. Solenoid valve having
 - a valve housing (1),
 - an electromagnet, which has
 - a coil (2),
 - a yoke (3)
 - and a clapper armature (4),
 - and having at least a first valve seat (5)
 - and a sealing element (6) which can be actuated by the clapper armature and which co-operates with the first valve seat,characterised in that the yoke has yoke pins (3.1, 3.2) and the clapper armature (4) is arranged on a yoke pin (3.1) at the end (4.1) thereof that is remote from the sealing element.
2. Solenoid valve according to claim 1, characterised in that the valve housing (1) is formed in one piece.
3. Solenoid valve according to claim 1, characterised in that the coil (2) is wound directly onto the valve housing.
4. Solenoid valve according to claim 1, characterised in that the clapper armature (4) is guided through the coil (2).
5. Solenoid valve according to claim 1, characterised in that the clapper armature (4) is arranged in the fluid region.
6. Solenoid valve according to claim 1, characterised in that the clapper armature (4) is of shell-like form in the region of the arrangement thereof on the yoke pin (3.1).

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7. Solenoid valve according to claim 1, characterised in that the clapper armature (4) is pressed onto the yoke pin (3.1) by means of a spring (7).

8. Solenoid valve according to claim 1, characterised in that the first valve seat (5) is pressed into the valve housing (1) and, to compensate for manufacturing tolerances, the first valve seat is adjustable in terms of the relative position thereof to the clapper armature by pressing in the valve seat.

9. Solenoid valve according to claim 1, characterised in that a first resilient element (14) is provided and acts on the sealing element (6) for the purpose of a closure of the first valve seat (5) by the sealing element.

10. Solenoid valve according to claim 1, characterised in that a second resilient element (15) is provided and acts on the sealing element (6), which co-operates with the clapper armature (4), for the purpose of a raising of the sealing element from the first valve seat (5).

11. Solenoid valve according to claim 1, characterised in that a first resilient element (14) is provided and acts on the sealing element (6) for the purpose of a closure of the first valve seat (5) by the sealing element, the first resilient element (14) and the electromagnet co-operating in such a manner that, when the electromagnet is excited, the sealing element (6) is lifted away from the first valve seat (5) and, when the electromagnet is not excited, the sealing element comes into closing contact with the first valve seat (5) owing to the force of the first resilient element (14).

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12. Solenoid valve according to claim 1,

characterised in that a second valve seat (13) is provided and co-operates with a sealing element (6) which can be actuated by the clapper armature (4).

13. Solenoid valve according to claim 1,

characterised in that two valve seats (5, 13) which are pressed into the valve housing (1) are provided, the sealing element (6) which can be actuated by the clapper armature being arranged between the two valve seats and the relative position of the valve seats to each other and to the clapper armature being adjustable by pressing in the valve seats.

14. Solenoid valve according to claim 1, characterised in that

- a first resilient element (14) is provided and acts on the sealing element (6) for the purpose of a closure of the first valve seat (5) by the sealing element,
- the first resilient element (14) and the electromagnet co-operate in such a manner that, when the electromagnet is excited, the sealing element (6) is lifted away from the first valve seat (5) and, when the electromagnet is not excited, the sealing element comes into closing contact with the first valve seat (5) owing to the force of the first resilient element (14),
- a second valve seat (13) is provided and co-operates with a sealing element (6) which can be actuated by the clapper armature (4) and
- the first and the second resilient element (14, 15) and the electromagnet co-operate in such a manner that,

when the electromagnet is excited, the force of the first resilient element (14) is counteracted by the clapper armature (4) and the sealing element (6) is moved into closing contact with the second valve seat (13) owing to the force of the second resilient element (15) and, when the electromagnet is not excited, the sealing element (6) comes into closing contact with the first valve seat (5) owing to the force of the first resilient element (14).

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